

Piping Plover

(*Charadrius melodus*)

Status: Endangered

Species at Risk



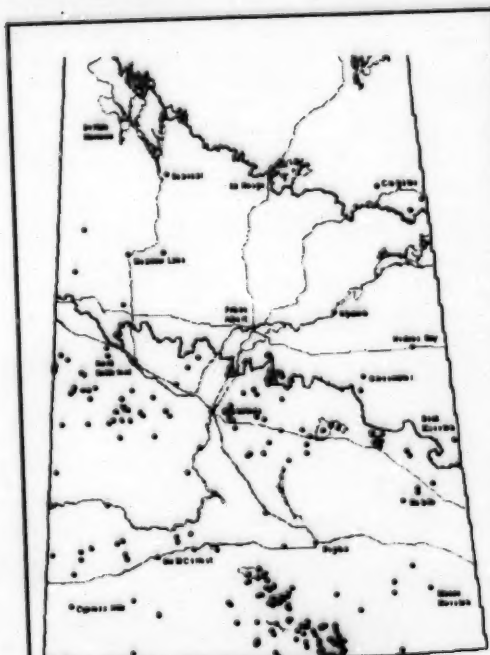
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Description

Male and female Piping Plovers are similar in size and colour. Their shape and markings are similar to the Semi-palmated Plover and the Killdeer, but grayer and paler on the back.

Adult Piping Plovers weigh between 45 and 65 grams. They have a white breast, abdomen and rump. Their head, back and wings are grey to pale brown which provides camouflage against the background colours of the saline wetland beach. Often, the bird's *peep-lo* whistle can be heard before the bird can be seen.

Their distinguishing features during breeding season include a black tipped orange bill, orange legs and a black band across their forehead from eye to eye. Compared to other members of the plover family, they have only one black chest stripe, sometimes referred to as a neckband, collar or belt. In the winter, the black head and chest band are paler and much less distinct. The bill and legs also fade in colour from bright orange to yellow orange.



1996 Distribution of Piping Plover in Saskatchewan
(*Charadrius melodus*)
(• = location)

Status

Listed as an endangered species in Saskatchewan in *The Wild Species at Risk Regulations*, Piping Plovers are protected on private, provincial and federal lands under part V of *The Wildlife Act*. Populations began to decline in 1945 and were listed in 1978 by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as threatened. As the population continued to decline, its status was changed to endangered in 1985.

Saskatchewan participated in an international census in 1991 and 1996. The Saskatchewan 1991 census found 1,172 birds and the 1996 survey located 1,384 birds, an increase of 15 per cent. Biologists think that many Piping Plovers were forced to move north from the United States into Saskatchewan to breed in 1996 because of the high water and flooding of good habitat along the Missouri River and its tributaries. Between 1991 and 1996, the total great plains population declined from 3,469 to 3,284 adults, or about five per cent. In the 1996 census, the total world population was 5,913 adult birds.

The Piping Plover breeds on pebbly beaches and saline (alkali) wetlands of southern Saskatchewan. The greatest number of breeding pairs have been found nesting in the drainage basins of Big Quill Lake, Chaplin Lake, Willowbunch Lake, Lake Diefenbaker and Manitou Lake near North Battleford. The Missouri Coteau is also an important breeding habitat for these birds. Over 20 per cent of the total world population migrates to Saskatchewan to breed between late April and early August. In the 1991 census, the highest population of breeding pairs in all of North America was found on the shores of the Lake Diefenbaker reservoir.

In Canada, Piping Plovers breed along the Atlantic shore, Lake of the Woods in western Ontario, and along the shores of lakes and saline wetlands of southern Manitoba, Saskatchewan and Alberta. In the United States, these birds breed along the Atlantic coast and in the saline prairie wetlands of Montana, North Dakota, South Dakota, Iowa and Nebraska. Their wintering grounds include the southern Atlantic shore of the United States and the Gulf of Mexico coastline. Some birds have also been sighted on Caribbean islands. The Piping Plover is only found in North America.

Life Cycle

Return and setting territory

Piping Plovers arrive in Saskatchewan from late April to early May. The males establish territories on sand flats or saline mud flats around lakes, sloughs or reservoirs. They begin ground and aerial displays to establish territories to each attract a mate. The aerial display involves a complex flight pattern, up to 35 metres in the air, with exaggerated, slow wing beats. These displays may last up to a half hour and involve rapid, persistent calling. On the ground, the males will chase other males away from their chosen nesting and feeding territory.

Nest

The male uses his feet to scrape a shallow depression in the sand for a nest. While the female inspects the nest, the male stands close by with his wings partially spread out and his tail fanned. The male will also court the female on the ground with an exaggerated upright posture and high marching-like steps. Mating usually takes place on the nesting grounds. The shallow nest is usually lined with pebbles. The pebbles help keep eggs off wet sand and drain water away from eggs after a heavy rain. The pebbles may also camouflage eggs when the adults are off their nest.

Eggs and Incubation

The female usually lays four buff-coloured, black speckled eggs in May. The adults arrange the eggs with the ends pointing to the middle to prevent them from rolling out of the nest.

On average, one egg is laid every two days. The total time, from laying the first egg to hatching, is 34 days. Both adults share the responsibility of incubating the eggs. If the nest is washed out by rising water levels or if the eggs are destroyed by predators before mid-June, the birds will often renest.

North American and Caribbean Distribution of Piping Plovers (*Charadrius melodus*)

LEGEND

-  Breeding range
-  Wintering range



(adapted from Prescott, 1997)

Chicks

Chicks hatch during the month of June and emerge from the eggs covered with down. After drying off, they leave the nest and are soon feeding on their own. Piping Plovers feed along the shoreline, close to their nest, in the morning and afternoon. They do not probe deeply into the sand for food like other shore birds. They eat mostly small insects and worms found near the water surface or washed up by waves.

The parents guard the chicks as they feed. When threatened by danger, the chicks will crouch and freeze in position. They are then hard to see against the background of the pebble beach because their colouration acts as camouflage. In bad weather, the chicks seek protection and warmth under the adults.

Chicks begin to fly between 20 and 25 days after hatching. By 30 days, usually the end of July, they can fly well. Chicks grow fast to prepare for migration, usually increasing their body weight by four to five times during their first six weeks. Piping Plovers usually leave Saskatchewan in early August to migrate south to their winter habitat.

Limiting Factors and Recovery Needs

Loss of habitat, land use practices, predation, bad weather and climate change are thought to be causing a decline in the number of Piping Plovers.

Fluctuations in water levels: Habitat can be lost through flooding in high water years. For example, changing water levels at Lake Diefenbaker reservoir throughout most of the 1990's had a harmful impact on Piping Plover reproduction. If water level rises rapidly during nesting, most nests may be flooded before the eggs hatch. The rise in water levels also reduces the beach width, decreasing the feeding area for flightless young. It also makes them more vulnerable to predators.

Stable water levels from year to year can also cause a problem. Vegetation will start to grow towards the water which also reduces the beach area. The ideal situation is for water levels to vary naturally over the entire range so that Piping Plovers can find enough suitable habitat in any given year.

Disturbances: Human, animal disturbances or all-terrain vehicles can also affect successful breeding and rearing of chicks. In agricultural areas, cattle coming to the shore to drink may trample nests or chicks. Sometimes small chicks cannot climb out of deep depressions left by cattle hooves. In late June and July, humans may also be using beaches where Piping Plovers nest and disturb the adults, causing them to abandon their nests. Piping Plover breeding habitat can be protected from livestock damage by fencing. In 1999, fencing was identified as being needed at Reflex, Manitou and Willowbunch Lakes.

Predation: The major Piping Plover predators are Ring-billed Gulls, American Crows, Northern Harriers, skunks, raccoons, foxes and coyotes. Adult birds are preyed upon by Merlins (a kind of falcons). Adults try to lure predators away from the nest by pre-empting to have a broken wing. Nest predation usually results in all the eggs being eaten.

Effects of weather: Piping Plovers also face problems on breeding grounds due to harsh weather and the effects of climate change. In 1998, heavy rains and cool temperatures accounted for high chick mortality at both Willowbunch and Big Quill Lakes. Climate warming on the prairies could cause droughts which would reduce habitat, especially affecting the small slough breeding sites in the Missouri Coteau.

More awareness and education about Piping Plovers and their habitat needs in Saskatchewan is important. Co-operation by landowners, livestock producers, government agencies, conservation organizations, bird watchers, and recreationists can help protect Piping Plovers by preventing disturbance to their nesting territories during their breeding season, from late April to early August.

Recovery Actions

The overall goals of recovery work for the Piping Plover are to protect the species and their habitat and to increase their success in rearing their young.

- In 1993 and 1994, extensive fencing was installed on four wetland basins to keep cattle away from the shoreline nesting habitat of Piping Plovers.
- Consultations continue with Saskatchewan Water Corporation to find solutions to the changing water levels which has led to the loss of nests and young at Lake Diefenbaker reservoir.
- Research has been done in Alberta and Saskatchewan to find ways to keep predators away from Piping Plover eggs. More chicks survived to fledge where nest exclosures were used at Manitou Lake and Lake Diefenbaker. These nest exclosures allowed the Piping Plovers to go in and out, but kept out predators.
- The Government of Saskatchewan, in co-operation with other Canadian and American organizations, will continue research on the Piping Plover. In 2001, Saskatchewan biologists and volunteers will again participate in the International Census of adult Piping Plovers on the breeding grounds.

How can YOU help?

Learn to identify Piping Plovers and avoid disturbing nesting areas during June and July. You may join one of the many provincial or national conservation organizations who focus their efforts on the conservation of species at risk and their habitat. If you need more specific information on the Piping Plover you may contact the Saskatchewan Conservation Data Centre at www.biodiversity.sk.ca

If you are a landowner, maintain natural habitat around wetlands and reduce disturbances by humans, pets or cattle, possibly through fencing projects. You may choose to contribute to the future of Piping Plovers by granting a *Conservation Easement* on any Piping Plover habitat on your land. A Conservation Easement allows you to retain ownership and ensure that the area is conserved in its natural state. Access information about the Saskatchewan Conservation Easements program at: <http://www.serm.gov.sk.ca/ecosystem/conservationeasements.php>

Selected References

Please contact your local library, the publishers of the documents or visit the Internet sites listed below, if you wish to research Piping Plover in more detail.

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